

CLAIMS

We claim:

1. A UV energy curable tape comprising:

a support layer;

5 an adhesive material including a UV energy curable oligomer, a UV energy initiator, and a material which emits optical light when said tape is substantially fully cured positioned on said support layer.

10 2. The UV energy curable tape of claim 1, wherein said adhesive material comprises an acrylate oligomer.

3. The UV energy curable tape of claim 1, wherein said UV energy curable oligomer comprises a material capable of reacting with radicals to form longer chain polymers.

15 4. The UV energy curable tape of claim 1, wherein said UV energy initiator comprises a photoinitiator.

5. The UV energy curable tape of claim 4, wherein said photoinitiator includes diphenyl groups that create radicals when exposed to UV energy.

6. The UV energy curable tape of claim 1, wherein said material which emits optical light comprises UV sensitive ink.

7. The UV energy curable tape of claim 6, wherein said material which emits optical light comprises from about .001 weight
5 percent to about 20 weight percent of said tape.

8. The UV energy curable tape of claim 1, wherein said material which emits optical light comprises UV sensitive dye

9. The UV energy curable tape of claim 1, wherein substantially fully cured comprises the absorption of about 5 millijoules/cm²
10 to about 10 joules/cm² of UV energy into said tape.

10. The UV energy curable tape of claim 9, wherein said UV energy comprises UV light.

11. A UV energy curable tape comprising:

a support layer including a material which emits optical
15 light when said tape is substantially fully cured; and

an adhesive material positioned on said support layer having a UV energy curable oligomer and a UV energy initiator as part thereof.

12. The UV energy curable tape of claim 11, wherein said adhesive material comprises an acrylate oligomer.

13. The UV energy curable tape of claim 11, wherein said UV energy curable oligomer comprises a material capable of reacting
5 with radicals to form longer chain polymers.

14. The UV energy curable tape of claim 11, wherein said UV energy initiator comprises a photoinitiator.

15. The UV energy curable tape of claim 14, wherein said
10 photoinitiator includes diphenyl groups that create radicals when exposed to UV energy.

16. The UV energy curable tape of claim 11, wherein said material which emits optical light comprises UV sensitive ink.

17. The UV energy curable tape of claim 16, wherein said
15 material which emits optical light comprises from about .001 weight percent to about 20 weight percent of said tape.

18. The UV energy curable tape of claim 11, wherein said material which emits optical light comprises UV sensitive dye.

19. The UV energy curable tape of claim 11, wherein substantially fully cured comprises the absorption of about 5 millijoules/cm² to about 10 joules/cm² of UV energy into said tape.

5 20. The UV energy curable tape of claim 19, wherein said UV energy comprises UV light.

21. A method of making a semiconductor chip comprising the steps of:

10 providing a semiconductor wafer substrate having a first surface;

forming a layer of UV energy curable tape on said first surface, said tape including a material which emits optical light when substantially fully cured; and

15 applying UV energy to said layer of UV energy curable tape until said material emits optical light.

22. The method of claim 21, further including the step of dicing said semiconductor wafer into at least two semiconductor chips after said step of forming said layer of UV energy curable tape on said first surface.

23. The method of claim 22, wherein said applying UV energy comprises shining UV light on said layer of UV energy curable tape in the amount of from about 5 millijoules/cm² to about 10 joules/cm².

5 24. The method of claim 23, further including the step of removing said semiconductor chips from said UV curable tape after said tape is substantially fully cured.

25. A semiconductor chip formed by said method of claim 21.

10 26. A method of making a semiconductor chip comprising the steps of:

providing a layer of UV energy curable tape on a support layer, said support layer including a material which emits optical light when said tape is substantially cured;

15 placing said UV energy curable tape on a surface of a semiconductor wafer; and

applying UV light on and through said support layer until said support layer emits optical light.

27. The method of claim 26, further including the step of dicing said semiconductor wafer into at least two semiconductor chips after said step of placing said UV energy curable tape on said surface of said semiconductor wafer.

5 28. The method of claim 27, wherein said applying step includes shining said UV light on and through said support layer in the amount of from about 5 millijoules/cm² to about 10 joules/cm².

29. A semiconductor chip formed by said method of claim 26.